U.S. COMMERCIAL SERVICE, TAIPEI

SMART CITIES OPPORTUNITIES REVIEW: SMART TRANSPORTATION, SMART GRID, INTER-ISLAND OPPORTUNITIY ANALYSIS

TAIPEI, TAIWAN

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U.S. Commercial Service

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Industry Overview

Over the past few years, the Taiwan authorities have been actively promoting the development of smart cities and smart technology, as demonstrated by the Smart City Summit and Expo that has been held annually since 2014. This international event allows local Taiwan companies to showcase their smart city solutions to international visitors. More recently, Taiwan authorities have rapidly expanded their involvement in this sector through initiatives put forward by the Tsai Ing-wen administration, including the 5+2 Industrial Innovat0ion Plan, which aims to promote growth in the areas of Internet-of-Things (IoT), biomedical, smart machinery, green energy, defense, new material and recycling parks. The administration believes that these industries are vital to Taiwan's technological and economic transformation. Initiatives such as the Asia Silicon Valley Development Plan are designed to promote Internet-of-Things (IoT) innovation in an ICT industry that has stagnated recently due to dependence on OEM/ODM manufacturing. 5+2 is backed by an US$3.333 billion Industrial Innovation Fund and an additional US$333 million from the National Investment Corporation, a new mechanism established by Taiwan's National Development Council.

In addition to the 5+2 plan, the Executive Yuan has also launched a series of 4G Smart City Projects since 2015; these projects receive funding from revenue earned through the auctioning of 4G spectrum-licensing. The objective of this initiative is to use existing 4G services to promote smart applications for local cities in areas such as security, logistics, financial services, transport, and entertainment.

Furthermore, in order to meet public demand for real-time traffic updates, integrated transportation data, and other smart technology services designed to facilitate better and safer travel in and between cities, the Ministry of Transportation and Communication has forged a smart transportation initiative. This will harness existing technologies, such as the eTag toll collection readers, as well as extensive R&D, to make transportation in Taiwan more convenient and accessible.

Lastly, the Tsai administration has put forward an infrastructure investment strategy called the Forward Looking Infrastructure Program, launched in early 2017. The project has a budget of US$14 billion and aims to streamline Taiwan's inter-city transportation links and promote the use of green energy. Taiwan authorities believe this will stimulate growth and catalyze industrial transformation. The project is expected to add an estimated US$32.5 billion to Taiwan's real GDP and create tens of thousands of new jobs.

Taiwan's existing strengths in the IT and digital technology sectors give it a comparative advantage in being able to quickly develop effective IoT infrastructure. Taiwan's efforts to boost innovation in this area have already put it on the map. Last year, the Intelligent Communities Forum, a U.S.-based think tank focused on job creation and economic development in the broadband economy, named five Taiwan communities as recipients of the ICF Smart21 2017 award.

Current Trends

The most significant progress regarding smart city development in Taiwan has been made in the areas of smart transportation, smart energy, and smart healthcare. This includes the development of smart energy grids by the local electric scooter company, Gogoro, and the EasyCard, a stored value card that can be used for local transportation, buying items at a variety of stores, and checking out books from the public library, among others. The National Health Insurance card, which contains a smart chip that allows doctors and health care professionals to view a patient's complete medical history, is another notable example of Taiwan's progress in smart technology and IoT.

The Taiwan Ministry of Science and Technology (MOST) is also looking to bolster the already-robust semiconductor industry by investing US$133 million over the next four years, with a particular focus on artificial intelligence. Since AI is a growing sector and an area in which Taiwan faces stiff competition with its neighbor, mainland China, MOST hopes that this action will encourage further investment by local firms in order to speed up the pace of Taiwan's AI development.

Additionally, in Taiwan, where scooters are a major mode of transportation and a large contributor to air pollution, electric smart scooters like those manufactured by Gogoro have the potential to become more widespread. However, most Taiwanese are still hesitant to purchase one due to the higher cost relative to gas-powered scooters. To help promote the concept, the Taiwan authorities have been providing subsidies of up to US$667 per electric scooter.

Regulatory Concerns / Barriers to entry

The smart city-related projects mentioned above are aimed at helping Taiwan become a major player in this rapidly-changing industry and addressing intense international competition. These projects seek to achieve full-scale industrial upgrades and transformation by linking local industries with international resources, thus facilitating adaptation to future trends. The Taiwan authorities will take advantage of technology, human resources, funds, markets, and ties with emerging nations to promote interdisciplinary innovation and inter-regional integration.

For those smart city-related projects that have received funding, the Taiwan authorities only accept applicants from local enterprises; foreign entities are not allowed to participate in the tender directly. U.S. companies would need to work with local partner(s) for such projects. Most foreign firms gain their initial foothold in the Taiwan market by using a local agent. Many Taiwan firms prefer the partnering aspect of an agent relationship. Although some companies are willing to act only as distributors, there is concern that foreign firms that are merely seeking distributors may not be serious about the market and will not support their distributors. Some U.S. exporters that sell equipment or machinery may find it necessary to locate a partner willing and able to do some

assembly or manufacturing for after-sales support in Taiwan. Although not necessarily formal joint ventures, these efforts require a higher degree of commitment to the market than simply selling through an agent. If the size of the market warrants, companies may wish to consider setting up a branch office or subsidiary in Taiwan. Taiwan welcomes foreign investment and establishing an office in Taiwan is relatively easy, although procedures are sometimes bureaucratic.

U.S. companies who are seeking local partners may consider using our Gold Key Matching Service (GKS). This is a business matchmaking service for U.S. companies interested in selling their products or services in Taiwan and who are looking for local agents, buyers, distributors, or joint venture partners. In a typical Gold Key case, specialists at the AIT Commercial Section find, pre-screen, and arrange appointments between qualified U.S. exporters and Taiwan partners.

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Best export sales prospects / opportunities

Today, Taiwan is faced with many challenges, including an aging population, a low birth rate, and a diversity of lifestyles. Smart city applications can solve a variety of social issues, such as public safety, home safety, energy production, education, construction, medical care, government administration, logistics, transport, and disaster relief. Listed below are some of the projects the Taiwan authorities and local enterprises are engaging in that could provide opportunities for U.S. companies looking to break into the Taiwan market.

Taiwan's Asia Silicon Valley Initiative aims to develop an ecosystem that fosters the expansion of smart technologies for local and regional development. High-level policy development will take place at the U.S.-Taiwan Digital Economic Forum, and NIST's Global Cities Team Challenge (GCTC), held in Washington D.C. on August 28-29, 2017, will provide a chance for direct city-private sector engagement. The Asia Silicon Valley Development Agency will lead a delegation of Taiwan cities to GCTC this summer. U.S. companies who want to learn more about the Taiwan authorities' smart city-related tenders may take this opportunity to meet with local cities.

The Forward Looking Infrastructure Program was launched in early 2017. Its Railway development project (Intercity Rail) will provide US$14 billion over eight years and constitutes the largest investment of the five major infrastructure projects. This initiative will include 38 railway development plans in five areas: 1) linking the high speed and traditional rail systems into an integrated transportation network; 2) upgrading and improving traditional rail service in eastern Taiwan; 3) adding trade-separated railway junctions and speeding up commute times; 4) promoting urban mass rapid transit; and 5) developing a railway to support tourism in central and southern Taiwan. Its goals are to make Taiwan's railway system a core transport service that is seamless, safe and reliable, convenient and easy to use, and sustainable. The system should also provide economic opportunities and integrate tourist attractions.

Starting in 2015, the Taiwan authorities have begun launching a series of 4G smart city programs with funding totaling US$116 mbillion. These initiatives are designed to help local governments develop their own smart city solutions. In addition to the Forward Looking Infrastructure Program, which focuses on Taiwan's inter-city transportation links, Tainan and Chiayi cities will also provide the laboratory testing sites for driver-less vehicles.

The Taiwan authorities also emphasize the development of artificial intelligence (AI) as it plays an important role in the growth of smart cities. The Executive Yuan's Office of Science and Technology will host a meeting called the "Smart System and Wafer Industry Development Strategy" in July 2017, which aims to develop a means of promoting AI over the next four years. Based on the conclusions reached by participants at this meeting, the Taiwan authorities will provide US$467 million to smart tech-related applications and projects starting in 2018. These will include cloud technology, big data, artificial intelligence, high speed calculation, driver-less car technology, IoT, smart cities, manufacturing, medical care, disaster prevention, and disease prevention

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